Abstract

Background: E6 and E7 proteins are essential factors in carcinogenesis of HPV (Human Papilloma Virus). The relation between E6 and E7 expression and cervical cancer progression lead to using that as a molecular biomarker in cervical cancer diagnosis. The purpose of this study is to investigate the relation between E6 and E7 expression and cervical cancer progression.

Method: A total of 60 formalin-fixed and paraffin-embedded (FFPE) cervical biopsy blocks with abnormal pathology diagnosis that infection with HPV 16 and 18 was approved in them, were investigated for E6 and E7 expression by Real-Time PCR method.

Results: E6 and E7 transcripts were detected in 70% of samples (42/60) including 47.6 % benign lesions, 60 % CIN1, 83/3 % CIN2,3 and 91.3 % of patients with cancer (P = 0.01). By considering pathology diagnosis as a gold standard, sensitivity, specificity, PPV, and NPV of E6, E7 mRNA test for detecting CIN2+ cases were calculated 89.65%, 48.38%, 61.90%, and 83.33%, respectively.

Discussion and conclusion: Over cervical cancer progression and development of high grade lesions, the presence of E6 and E7 transcripts was seen in a higher percentage of patients. According to positive results in benign lesions, the use of HPV RNA detection can be helpful as a complementary test for cervical cancer screening.

Keywords: E6 and E7- Cervical cancer- Gene expression- Real-Time PCR